

CLAIM AMENDMENTS

What is claimed is:

1. (Currently Amended) A grease composition comprising:

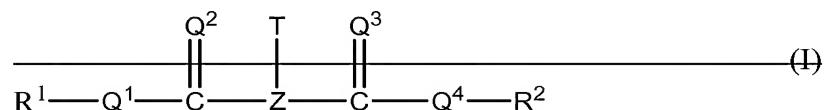
(a) the reaction product of:

(i) a calcium containing overbased organic acid; and

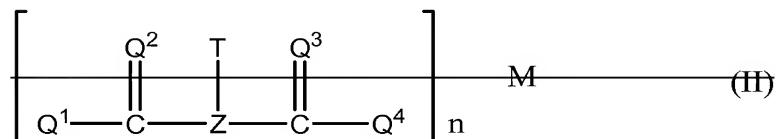
(ii) at least one acid producing compound or derivatives thereof ~~selected from the group consisting of:~~

(1) a non-polymeric hydrocarbyl substituted dicarbonyl derivative selected from the group consisting of an acid, an ester, a salt, an anhydride, ester-acid, acid-salt and mixtures thereof, wherein the non-polymeric hydrocarbyl substituted dicarbonyl derivative is selected from a non-polymeric hydrocarbyl substituted dicarbonyl derivative of tartaric acid, muccic acid, citramalic acid, citric acid, isopropylmalic acid, gluconic acid, malic acid, oxalic acid, succinic acid, glutaric acid, adipic acid, pimelic acid, suberic acid, azelaic acid, sebamic acid, 1,11-undecanedicarboxylic acid, 1,12-dodecanedicarboxylic acid and mixtures thereof, and wherein the hydrocarbyl contains about 4 to about 80 carbon atoms;

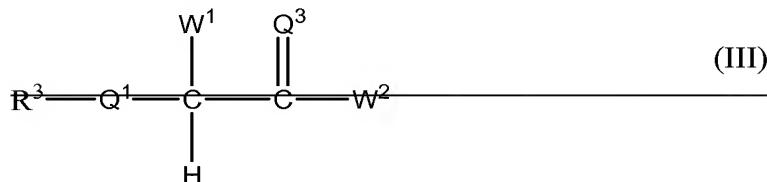
derived from the formulae:



or



or



wherein,

~~T is a hydrocarbyl group or mixtures thereof;~~

~~Z is 2 to about 8, carbon atoms;~~

~~Q¹, Q², Q³, Q⁴ and Q⁵ are all independently oxygen or sulphur;~~

~~R¹, R², R³ and R⁴ are independently hydrogen or a hydrocarbyl group;~~

~~W¹ is Q⁵-R⁴;~~

~~W² is a hydrogen, Q⁴-R² or mixtures thereof;~~

~~M is a valence of a metal ion, an ammonium ion or mixtures thereof, and~~

~~n is an integer equal to or less than the available valence of M;~~

~~(2) a copolymer derived from monomers comprising (1) an olefin; and (2) an unsaturated dicarboxylic acid anhydride or derivatives thereof; and~~

(b) an oil of lubricating viscosity,

wherein the calcium containing overbased organic acid contains colloidally dispersed calcium carbonate selected from the group consisting of calcite, vaterite and mixtures thereof.

2-4. (Cancelled).

5. (Previously Presented) The composition of claim 1, wherein the non-polymeric hydrocarbyl substituted dicarbonyl derivative is nonyl succinic acid, decyl succinic acid, undecyl succinic acid, dodecyl succinic acid, tridecyl succinic acid, tetradecyl succinic acid, pentadecyl succinic acid, hexadecyl succinic acid, heptadecyl succinic acid, octadecyl succinic acid, octadecenyl succinic acid, nonadecyl succinic acid, the reaction product of an olefin and a glyoxylic acid or mixtures thereof.

6. (Cancelled).

7. (Cancelled).

8. (Cancelled).

9. (Cancelled).

10. (Original) The composition of claim 1 further comprising a thickening agent.

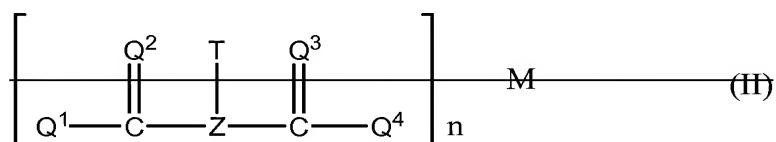
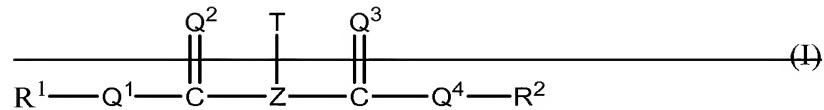
11. (Cancelled).

12. (Previously Presented) The composition of claim 1, wherein the overbased organic acid is present in the range from about 5 to about 80 weight percent of the grease composition; wherein the acid producing compound or derivatives thereof is present in the range from about 0.001 to about 25 weight percent of the grease composition; wherein a thickener is present in the range from 0 to about 20 weight percent of the grease composition; wherein the oil of lubricating viscosity is present in the range from about 0.01 to about 95 weight percent of the grease composition; wherein a functionalised polymer containing an unsaturated dicarboxylic acid anhydride or derivatives thereof is present in the range of 0 to about 25 weight percent of the grease composition; and wherein at least one other performance additive is present in the range of 0 to about 20 weight percent of the grease composition.

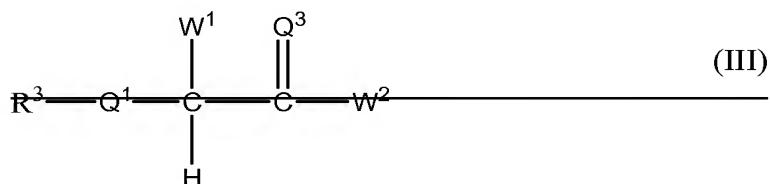
13. (Currently Amended) A process for preparing a grease composition comprising:

(1) a non-polymeric hydrocarbyl substituted dicarbonyl derivative selected from the group consisting of an acid, an ester, a salt, an anhydride, ester-acid, acid-salt and mixtures thereof, wherein the non-polymeric hydrocarbyl substituted dicarbonyl derivative is a non-polymeric hydrocarbyl substituted dicarbonyl derivative of tartaric acid, muccic acid, citramalic acid, citric acid, isopropylmalic acid, gluconic acid, malic acid, oxalic acid, succinic acid, glutaric acid, adipic acid, pimelic acid, suberic acid, azelaic acid, sebamic acid, 1,11-undecanedicarboxylic acid, 1,12-dodecanedicarboxylic acid and mixtures thereof, and wherein the hydrocarbyl contains about 4 to about 80 carbon atoms;

~~derived from the formulae:~~



or



wherein,

~~T is a hydrocarbyl group or mixtures thereof;~~

~~Z is 2 to about 8, carbon atoms;~~

~~Q¹, Q², Q³, Q⁴ and Q⁵ are all independently oxygen or sulphur;~~

~~R¹, R², R³ and R⁴ are independently hydrogen or a hydrocarbyl group;~~

~~W¹ is Q⁵-R⁴;~~

~~W² is a hydrogen, Q⁴-R² or mixtures thereof;~~

~~M is a valence of a metal ion, an ammonium ion or mixtures thereof; and~~

~~n is an integer equal to or less than the available valence of M; (ii) a copolymer derived from monomers comprising (1) an olefin; and (2) an unsaturated dicarboxylic acid anhydride or derivatives thereof; and a non-overbased organic acid other than (i) containing about 4 or more carbon atoms and about 2 or more acid groups; and (c) an oil of lubricating viscosity to form an overbased mixture;~~

(2) adding an aqueous solvent to the overbased mixture of step (1) to form a solvated overbased mixture;

(3) heating the a solvated overbased mixture of step (2) to form a solvated colloidal mixture that contains colloidally dispersed calcium carbonate selected from the group consisting of calcite, vaterite and mixtures thereof;

(4) removing the aqueous solvent from the solvated colloidal mixture of step (3) to form colloidal mixture; and

(5) optionally adding to the colloidal mixture of step (4) at least one other performance additive selected from the group consisting of antioxidants, rust inhibitors,

metal deactivators, antiwear agents, antiscuffing agents, extreme pressure agents, foam inhibitors, demulsifiers, friction modifiers, viscosity modifiers, pour point depressants and mixtures thereof to form a grease composition.

14. (Original) A product prepared by the process of claim 13.

15. (Cancelled).

16. (New Claim) The composition of claim 1, wherein the non-polymeric hydrocarbyl substituted dicarbonyl derivative is a derivative of succinic acid, and wherein the hydrocarbyl contains about 4 to about 80 carbon atoms.

17. (New Claim) The composition of claim 1, wherein the hydrocarbyl contains about 6 to about 20 carbon atoms.